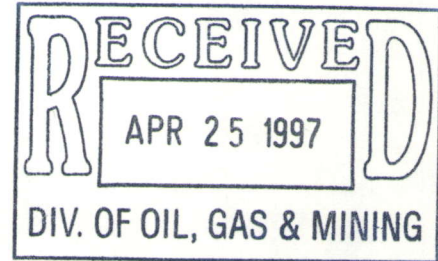


MT NEBO SCIENTIFIC, INC.
research & consulting

M/049/011
FILE COPY

April 25, 1997

D. Wayne Hedberg
Permit Supervisor
Minerals Reclamation Program
STATE OF UTAH
Division of Oil, Gas & Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, UT 84180-1203



RE: Response to Comments from Division Review (9/17/96)
Larson Limestone Company (M/049/011)

Dear Mr. Hedberg:

Enclosed please find two (2) set of responses from Division comments dated September 17, 1996. I am submitting them in behalf of Larson Limestone Company.

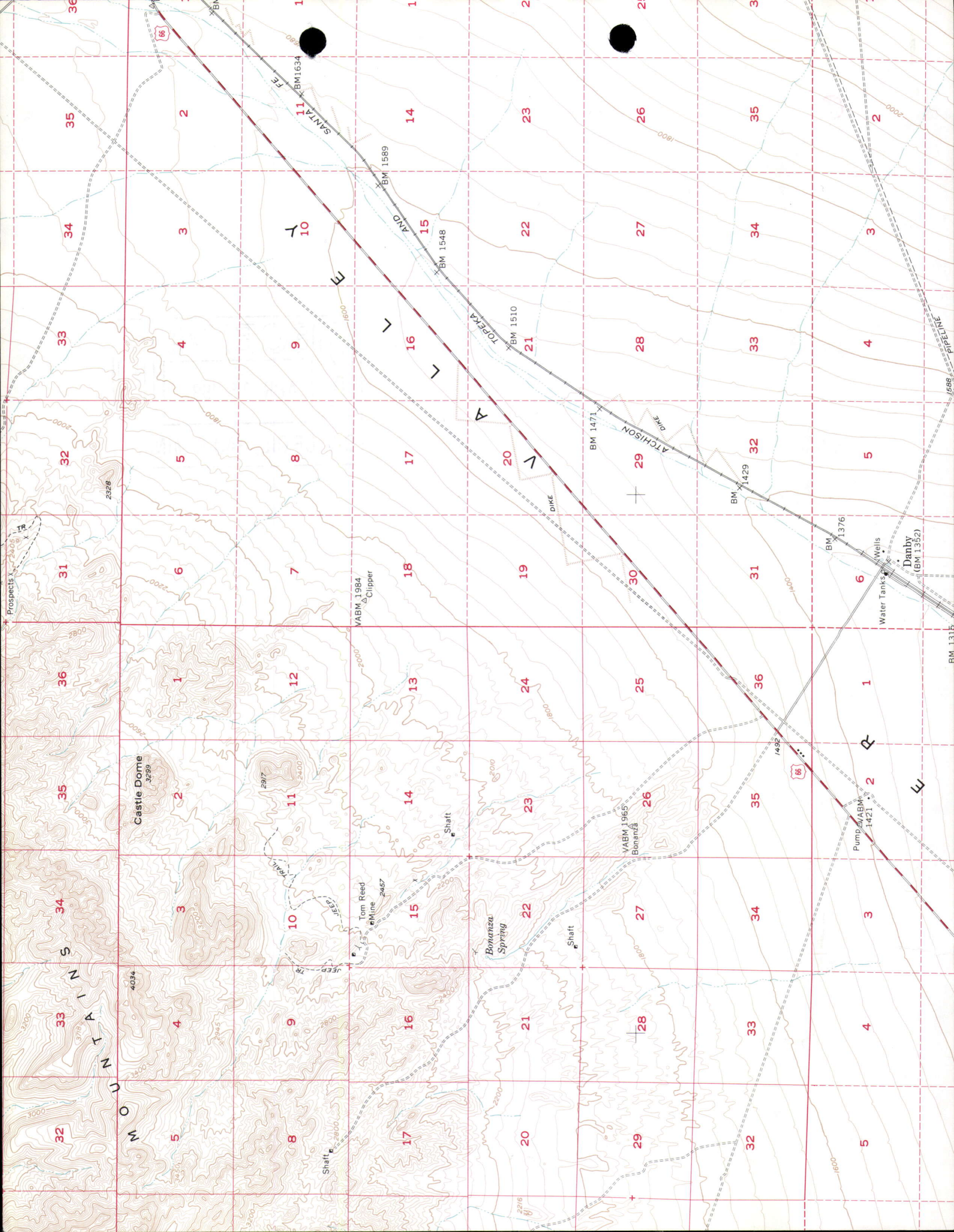
Please contact us with questions or comments.

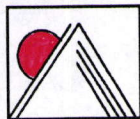
Sincerely,

Patrick D. Collins, Ph.D.
Environmental Consultant

cc: Jerry Larson
Mark Hardman

Enclosures





MT NEBO SCIENTIFIC, INC.
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LARSON LIMESTONE COMPANY
RESPONSE TO DEFICIENCIES OF THE
NOTICE OF INTENT
FROM A REVIEW BY THE
STATE OF UTAH
DIVISION OF OIL, GAS & MINING (9/17/96)

April 25, 1997

PREFACE NOTES:

1. The Table of Contents of this submittal replaces the Table of Contents in the current NOI.
2. The title pages of this submittal should be added to each major section (after the yellow pages).
3. New yellow-paged ^{divider} tab marker pages should be added to the current NOI.
4. When new maps are added, the following deficiency responses, a new plastic sheet protector is included. ^d
5. If a map is replaced, use the existing sheet protector.

R647-4-105 - Maps, Drawings & Photographs

105.1 Topographic base map, boundaries, pre-act disturbance

1. *Deficiency:*

*- OK
see map*

DWG. R647-4(E)

Please revise Drawing R647-4 (A) to show the extent of mining operation which occurred pre-act (prior to July 1, 1977). Please identify areas which were impacted prior to 1977 which have not been utilized since that date. Identify areas that have been utilized by this operation since July 1, 1977. (LK).

Response:

Drawing R647-4 (A) has been changed to reflect the request above.

Dwg. R647-4 (A) of this submittal replaces
Dwg. R647-4 (A) currently in the NOI.

Sec. R647-1, pp. 1-3, 4/25/97 of this submittal replaces
Sec. R647-1, pp. 1-2, 8/2/96 of the current NOI.

Sec. R647-4-105, pp 7-11, 4/25/97 of this submittal replaces
Sec. R647-4-105, pp. 7-8, 8/2/96 of the current NOI.

2. *Deficiency:*

Please provide another version of Drawing R647-4(A) which includes an overlay of the land ownership shown in Drawing R647 (B) in addition to the mine features shown in (A). (AAG).

Response:

✓ An new map has been prepared to address the above comment.

Dwg. R647-4 (B) of this submittal replaces
Dwg. R647-4 (B) currently in the NOI.

105.2 - Surface Facilities Map1. *Deficiency:*

OK
map
547- 4(F)
This map needs to show the extent of current disturbance as well as the projected disturbance for at least the next five-year period. Please include a disturbed area boundary on the surface facilities map showing the projected five-year disturbance (LK).

Response:

Several places in the review by DOGM mentions showing a 5-Year (or 10-Year) plan. We have elected a 10-Year plan. Anything shorter is difficult to show because only a small amount of new disturbance in done on a yearly basis. A new map has been prepared to show this plan.

Dwg. R647-4 (F) of this submittal should be added to the current NOI.

105.3 - Drawings or Cross Sections (slopes, roads, dumps, etc.)

1. *Deficiency:*



Please provide typical cross sections of all pads, roads, dumps, etc (LK).

Response:

No dumps currently exist at the quarry. A typical cross section of roads and pads has been included with this submittal.

Figure 10 of this submittal should be added to the Figures section of the current NOI.

2. *Deficiency:*

Please provide a cross sectional drawing of the typical quarry bench design used during mining operations and after reclamation (for the five to ten year mine plan). (AAG)

Response:

Figure 9 of this submittal should be added to the Figure section of the current NOI.

3. *Deficiency:*

Please provide a reclamation treatments map similar to the surface facilities map which identifies the reclamation treatments to be applied to the various areas using cross hatching or color coding. This map should be the basis for the reclamation cost estimate requested under the Surety section of the rules. (AAG).

Response:

Dwg. R647-4(G) of this submittal should be added to the ~~drawings~~ ^{maps} of the current NOI.

Additional maps were corrected. Please also make the following changes.

Dwg. R647-4(C) of this submittal should replace
Dwg. R647-4(C) of the current NOI.

Dwg. R647-4(D) of this submittal should replace
Dwg. R647-4(D) of the current NOI.

Dwg. R647-4(E) of this submittal should be added
to the drawings of the current NOI.

R647-4-106 - Operation Plan

106.2 Type of operations conducted, mining method, processing, etc.

1. *Deficiency.*

Please describe the typical blasting practice to be used in this operation, i.e. frequency of blasting, description of typical blast rounds, depth of holes, extent of blast area, blasting agents, etc. (AAG).

Response:

The blasting practice has been described in the new Operations section of this submittal.

Sec. R647-4, pp. 1-19 , 4/25/97 of this submittal replaces
Sec. R647-4, pp. 9-20 , 8/2/96 of the current NOI.

106.3 Estimated acreage disturbed, reclaimed, annually?

1. *Deficiency.*

Please provide an estimate of the acreage to be disturbed on an annual basis for a minimum of the next five years of mine life (ten years maximum). (AAG).

Response:

Estimations of acreage to be disturbed and reclaimed on and annual basis is included in the new Operations section.

(The page insertions have been done in previous deficiencies).

106.5 Existing soil types, location, amount

1. *Deficiency:*

While the NOI contains general soil survey information and a soils map, it does not indicate the volumes of soil materials that have been salvaged in the past or the projected volume of soil material that could be salvaged in the future. Please provide an estimate of the volume of salvageable soil material for the next five to ten years of mining. (LK).

Response:

The new Operations Plan also describes the soil with regard to topsoil salvage (see "Soils") .

106.6 Plan for protecting & redepositing soils

1. *Deficiency:*

The NOI does not discuss how soil material are protected (stockpiled) or how they will be redeposited, or to what depth they will be redeposited. Please describe the measures to be taken to protect the topsoil while it remains in the stockpiles. These measures could include signs, berms, interim seeding, etc. Please provide an estimate of the depth of cover of redeposited topsoil over the disturbed area. (LK).

Response:

This deficiency has been partially described in the above deficiency. The "estimate of the depth of cover of redeposited topsoil over the disturbed area" will be described in the subsequent reclamation section.

Page to insert have been done in previous deficiencies and will be done in subsequent deficiencies.

R647-4-107 - Operation PracticesOperation Practices1. *Deficiency:*

Please describe the specific measures or practices which will be utilized at this site during operations to comply with the Operations Practices section of the rules. You do not need to describe measures to be taken for a feature which is nonexistent at the mine site. For example, the closing or guarding of shafts. (AAG).

107.4 Deleterious material safely stored or removed1. *Deficiency:*

Page 11 of the submission states that waste lubricating and hydraulic oils will be burned to produce heat, and waste oils will be stored in above ground steel containers in the maintenance shop. Has a permit for burning waste products been obtained for the appropriate Division of the Department of Environmental Quality? Is the storage area for waste products in the maintenance shop designed to contain the entire volume of material stored there in the event of a spill? Are waste oils removed from the site by a commercially licensed agent? (AAG)

Response:

The above questions and comments have been addressed in the new Operation Plan, under Operation Practices, Deleterious Materials.

These pages have been inserted from previous deficiencies.

107.5 Suitable soils removed & stored1. *Deficiency:*

The NOI does not contain specific data regarding the suitability of soils for ultimate reclamation. Attached is a list of soil parameters that should be used for soil analysis. One sample from each soil series that has been, or will be disturbed needs to be analyzed for

these parameters. (LK).

Response:

The above questions and comments have been addressed in the new Operation Plan, under Operation Practices, Soils Removed and Stored.

These pages have been inserted from previous deficiencies.

R647-4-109 - Impact Assessment

109.1 Impacts to surface & groundwater systems

1. *Deficiency:*

The application discusses mining the entire portion of Section 31 over a thirty year period. As such, the operator does not feel that a reclamation plan can be anything but conceptual at this point in time. It is our opinion that an attempt to put together a conceptual plan addressing a shorter time frame is necessary. Using five or ten year increments would help define the limits of the operation over shorter periods of time. Open ended statements like "if drainages are to be affected then they will be reclaimed in a stable manner" are fine, but lack the specifics that the Division can review in regard to actual channel designs or location. The existing topography defines the drainages in the immediate area. The mine development plan must identify which drainages will ultimately be affected, how those drainages will be impacted and what mitigation, if any, is necessary. (TM).

Response:

The affected drainages are identified and a discussion of effects at final reclamation is presented in the attached insertion. This text has already been added by previous response.

Calculations Pp. 1-13, April 1997 of this submittal is included in the Appendix in this submittal. Where have we inserted the Appendix. ✓

109.3 Impacts on existing soils resources

1. *Deficiency:*

See comment under R647-4-106.5 & 107.5 (LK).

Response:

See response to R647-4-106.5 & 107.5.

109.4 Slope stability, erosion control, air quality, safety

1. *Deficiency:*

Does the operation currently manage surface water runoff through ditches or ponds to prevent erosion and offsite transport of sediments? Please provide a description of how storm water is routed. Unless exempted by rule, Larson will need to contact the State Division of Water Quality to obtain the necessary Storm Water and Groundwater Discharge permits (TM).

Response:

A description of how storm water is routed through the operation area is presented in this submittal.

This has been inserted other instructions

2. *Deficiency:*

Please describe the impacts this operation will have on the stability of slopes and highwalls within and adjacent to the mine site for the next five to ten years. Please describe the impacts these slopes and highwalls will have on public safety and describe any action taken or proposed to mitigate these impacts (AAG).

Response:

The Impact section now describes the impacts slopes and highwalls will have on public safety and actions taken to mitigate these impacts

Sec. R647-9, pp. 1-21 , 4/25/97 of this submittal replaces
Sec. R647-9, pp.21-39 , 8/2/96 of the current NOI.

R647-4-110 - Reclamation Plan

110.2 Roads, highwalls, slopes, drainages, pits, etc., reclaimed

1. *Deficiency:*

Drainage reclamation plans are addressed in a very generic nature. The plans need to be more specific regarding what will exist in five years or ten years. (TM).

Response:

Predicted storm runoff flows are very small. The hydrology for the reclaimed drainages has been presented in R647-4-109. Drainage way reclamation is described in the submittal and has been inserted by previous instructions.

2. *Deficiency:*

Please describe specifically how roads, highwalls, slopes, pads and similar structures will be reclaimed. For example, provide details *such as* "the main haul road will be regraded and ripped to a minimum depth of 12 inches using a dozer, then topsoil will be replaced to a depth of 6 inches followed by drill seeding." Please describe the highwall angle and slope configuration which will remain after final reclamation. Since the long term mine plan is to completely remove the hillside negating the need for reclamation of these features, please describe reclamation of these features at the end of the next five to ten years. (AAG).

Response:

A new reclamation plan has been written for the 10-year period.

Sec. R647-, pp. 1-16, (8/2/96 & 4/25/97) of this submittal replaces Sec. R647, pp. 40-46, 8/2/96 of the current NOI.

110.3 Description of facilities to be left (post mining use).

1. *Deficiency:*

The NOI does not discuss what, if any, facilities will be left to facilitate the post mining land use. As such, it is assumed that all facilities will be removed and reclaimed. This includes all building, structures, pads, roads, etc. Please verify this assumption or provide other information describing the features proposed to remain. Please note that a variance request is required for features which are proposed to remain unreclaimed. (LK).

Response:

This was done and inserted with previous deficiency.

110.5 Revegetation planting program

1. *Deficiency:*

While the NOI does contain an acceptable revegetation seed mix, it is uncertain as to how seeding will be performed or the time of year that seeding is anticipated. These items need to be addressed. The Division recommends that seeding take place in late fall (LK).

Response:

This was done and inserted with previous deficiency.

R647-4-111 - Reclamation Practices

111.1 Public safety & welfare

1. *Deficiency:*

Please describe the specific measures or practices which will be utilized at this site during reclamation to enhance public safety and minimize hazards. For example, will trash and debris be removed from the site to a commercial landfill? By whom? You do not need to describe measures to be taken for a feature which is nonexistent at this mine site. For example, the permanent sealing of shafts. (AAG).

Response:

This has been done with previous insertions to the NOI.

111.2 Reclamation of natural channels

1. *Deficiency:*

Please provide the necessary information to describe how surface water is (or will be) routed through the surface facilities and other disturbances over both the short and long term. The plan lacks any specific details in this regard. The Division agrees with the assessment that the mine will be active for many years into the future, but the application still needs some detail regarding the (disposition) of surface water drainage at various increments of time (TM).

Response:

Drainage areas and storm runoff flowrates are very small. Offsite tributary areas produce almost no runoff in storm events of less than 100-year return period (see computations in appendix). Because of the small flows involved, the operators have not found a need to formalize the drainage system. The existing pads in the operation areas are virtually flat. Runoff from small storm events are contained in incidental depressions on the surface of the pads. Runoffs, from storms producing runoff in excess of the depression volumes, sheet flow off of the pads in the directions shown on the Surfaces Facilities Drawing No. R647-4(A).

Drainage channels are shown on Drawing No. R647-4(G) Reclamation Treatments. A description of how drainage channels will be reclaimed has been inserted with previous information

111.3 Erosion & sediment control

1. *Deficiency:*

The plan is very generic regarding language describing sediment control and erosion control. Please describe how storm water will be routed and/or contained to prevent off site sediment deposition related to mining operations. Please describe the specific measures to be taken at different location on the site for erosion and sediment control. (TM).

Response:

1. Storm runoff flows from the site are small. Erosion onsite is controlled through grading. Sediment control is provided in the vegetation buffer downstream of the disturbed areas. A description of the mine erosion and sediment control practices have been inserted to the NOI.

111.6 All slopes regraded to stable configuration

- 1 *Deficiency:*

The submission states that all slopes will be regraded to a stable configuration. Please describe what this configuration will be (angle, slope length) for the various slopes of waste piles, etc. (AAG).

Response:

This has been done with previous insertions to the NOI.

111.7 Highwalls stabilized to 45 degrees of less

1. *Deficiency:*

Please describe the highwall configuration after final reclamation according to a five to ten year mine plan (AAG).

Response:

✓ This has been explained and submitted by early deficiencies into the NOI (see Reclamation, Highwalls?).

111.8 All roads and pads reclaimed

1. *Deficiency:*

Please describe which road and pads will be reclaimed and which of these features are proposed to remain. Please identify these features on the reclamation treatment map requested under section R647-4 105.3. (AAG).

Response:

This has been explained and submitted by early deficiencies into the NOI .

111.9 Dams & impoundments left self draining & stable

1. *Deficiency:*

A statement is made that all dams and impoundments will be self draining and mechanically stable unless shown to have sound hydrologic design and to be beneficial to the post mining land use. Please describe where those structures are (or would be) located. (TM)

Response:

There are no dams nor impoundments located in the bond area. If such are constructed in the future, the operator will comply with the appropriate regulations. This language has been inserted into Section R647-4-111 in previous instructions.

111.11 Structures & equipment buried or removed

1. *Deficiency:*

Please describe specifically which structures and equipment are proposed to be buried onsite and which items will be removed. This practice is generally acceptable to the Division provided the materials are inert and are buried under minimum of three feet of cover. (AAG).

Response:

This has been explained and added by early deficiencies into the NOI (see Reclamation, Structures and Equipment to be Buried).

✓

Sec. R647, pp. , 8/2/96 of the current NOI.

111.12 Topsoil redistribution**1. *Deficiency:***

The NOI does not contain specific information regarding the redistribution of topsoil. How will this be accomplished? At what thickness will the topsoil be replaced? (LK).

Response:

This has been explained and added by early deficiencies into the NOI.

R647-4-112 - Variance

1. The submission did not contain any variance request. We are assuming that none are necessary (AAG).

R647-4-113 - Surety**1. *Deficiency:***

The submission did not contain a reclamation surety estimate. The Division cannot prepare a reclamation cost estimate based on the information provided. Additional details are needed describing the reclamation treatments and areas to be reclaimed. Please provide an estimates of the reclamation costs in your response. (AAG).

Response:

Sec. R647-113, p1. , 4/25/97 of this submittal should be added to the current NOI.

R647-4-115 - Confidential Information

1. No information in this submission was identified as confidential.
(AAG).